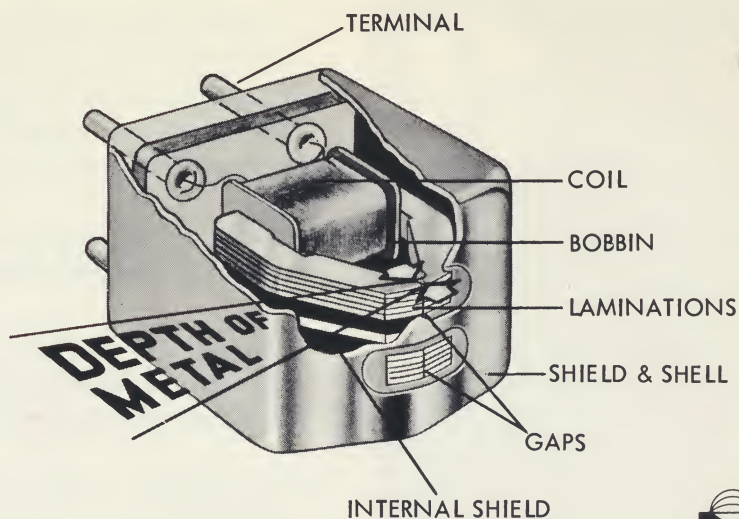


# 1

## WHAT'S INSIDE A TAPE HEAD?

These are the construction features of a typical Nortronics laminated tape head!

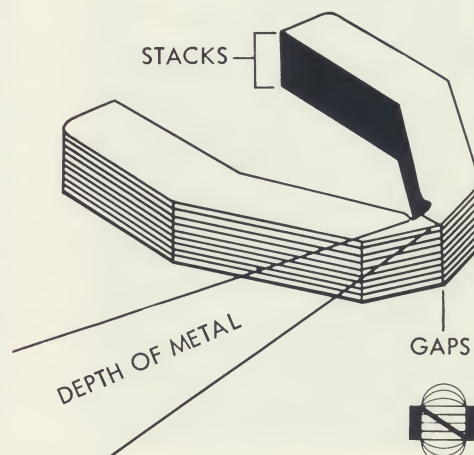


# 2

## HOW DO ALL TAPE HEADS WEAR OUT?

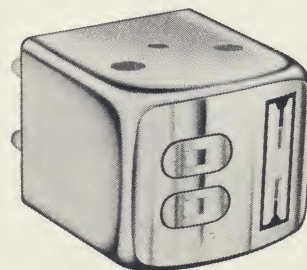
- Magnetic tape itself is the real cause of head wear! If you operate your tape recorder 5 hours a day at 7.5 IPS for only one month, 640 MILES OF TAPE HAS PASSED OVER THE HEAD FACE! That's why it is important to check heads regularly!
- The abrasive action of tape, as it passes over the face under pressure, grinds away the surface of the head.
- As wear progresses, the "Depth of Metal" is gradually worn away. The illustration shows the "Depth of Metal" found on a new head.

"DEPTH OF METAL" FOUND ON A NEW HEAD



## NOW IS THE TIME TO GO "PROFESSIONAL" WITH NORTRONICS NEW "COMBO" HEAD...

- Have three heads on your tape recorder! With the "Combo" head, you can monitor your tapes while you record!
- The "Combo" head combines Record, Playback and Erase functions on one regular size Nortronics head.
- Your present playback head and a new Nortronics "Combo" head does the work of three heads in the space for two!



SEE YOUR AUTHORIZED NORTRONICS DEALER TODAY  
FOR ALL REPLACEMENT HEADS AND ACCESSORIES!



**Nortronics**  
Minneapolis, Minnesota 55427



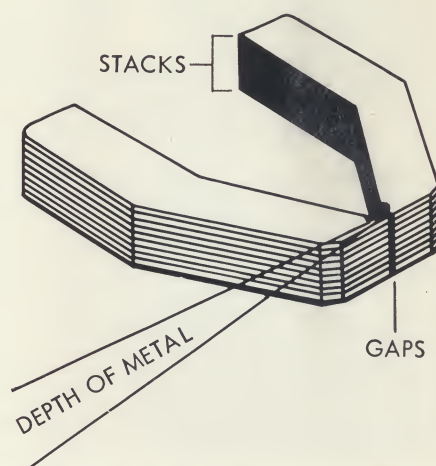


# 3

## WHAT HAPPENS WHEN THE "DEPTH OF METAL" WEARS AWAY?

- Observe the "Depth of Metal" typically found on a worn head. The all important, intimate tape-to-gap contact becomes impossible because the surface of the head has worn unevenly.
- The tiny gap, between the stacks, wears through and eventually opens up.
- Finally, severe high frequency losses and erratic outputs occur, and the brilliant realism of tape is lost!
- The fidelity of the most expensive equipment is no better than the tape head reproducing it!

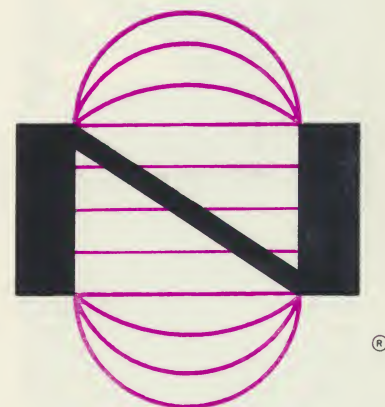
"DEPTH OF METAL" TYPICALLY  
FOUND ON A WORN HEAD



# 4

## WHAT'S THE SOLUTION?

- REPLACE WORN HEADS WITH NEW NORTRONICS PREMIUM TAPE HEADS! Don't wait until serious sound reproduction losses occur!
- CHECK WITH YOUR NORTRONICS DEALER! Get full value from your growing investment in magnetic tape.
- YOUR NORTRONICS DEALER IS A SPECIALIST IN TAPE RECORDERS! He has the most complete tape head replacement program available anywhere!

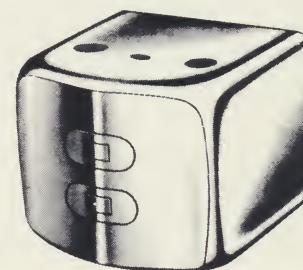


# 5

## ONLY NORTRONICS OFFERS PREMIUM BROADCAST QUALITY REPLACEMENT HEADS!

### All Nortronic PREMIUM Heads Feature:

- 100 micro-inch gaps for better high frequency response!
- Precision lapping for straighter, truer gaps!
- Deposited quartz spacing for cleaner gaps; no smear!
- More laminations for increased efficiency!
- Smaller cores for less core losses!



CHECK YOUR TAPE HEADS TODAY--THEN SEE YOUR NORTRONICS DEALER! HE HAS FACTORY RECOMMENDED REPLACEMENT HEADS FOR OVER 500 DIFFERENT TAPE RECORDERS!

**THE NORTRONICS COMPANY, INC.**

MINNEAPOLIS, MINNESOTA 55427

8101 TENTH AVENUE NORTH TELEPHONE 545 - 0401



┌ T. Nelson Syst. Cons. ┐  
Box 1546  
Poughkeepsie, N. Y. 12603  
└ ┘

Thank you for your recent inquiry and for your interest in NORTRONICS products.

We are enclosing descriptive literature on our general product line for your examination and use. Our factory representative in your area is listed below. He will be glad to supply you with any additional information that you may need.

If we can be of further assistance, please let us know. We are looking forward to being of service to you.

Sincerely,

THE NORTRONICS COMPANY, INC.

┌ COMPONENT MARKETERS, INC.  
Nortronics Representative  
109 Valley Road  
Montclair, New Jersey  
└ (201-746-6717)

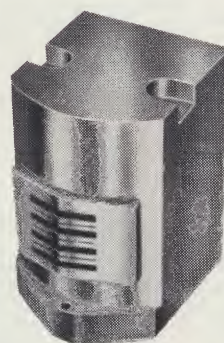
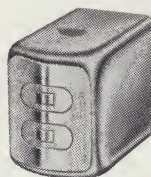
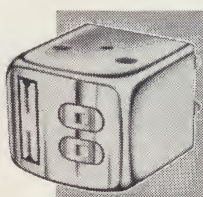
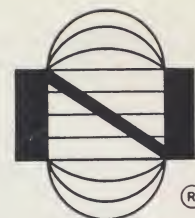
┌ *J. F. Dundovic*  
Joseph F. Dundovic  
Industrial Sales Manager  
└

*Nortronics*

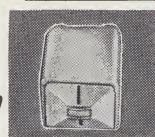
MAGNETIC TAPE HEADS



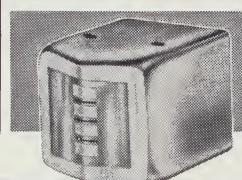
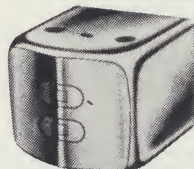
# Nortronics®



ERASE-RECORD/PLAYBACK-RECORD



RECORD/PLAYBACK-ERASE



## Nortronics offers the most complete line of MAGNETIC TAPE HEADS and accessories

NORTRONICS magnetic tape heads are designed to offer highest quality performance and long dependable service. As the foremost manufacturer and proponent of laminated-core magnetic heads, NORTRONICS now offers a complete line of heads, available in a wide selection of track styles, functions, and sizes in PREMIUM or STANDARD laminated versions.

### PREMIUM

The PREMIUM series of professional heads gives unsurpassed performance for broadcast, industrial, recording studio, and other exacting applications. Long life and extended high frequency response, particularly at the slower tape speeds, are major benefits in addition to the features listed below:

- Fine laminated, precision-lapped, low loss core structures.
- Deposited quartz gaps result in exceptionally clean, sharp gap edges for optimum high frequency resolution. Gaps are from 50 to 500 micro-inches in length; shorter gaps down to 20 micro-inches available on special order.
- Hyperbolic face contour gives intimate tape-to-gap contact without need for pressure pads, but is designed to allow use with pressure pads as well.
- Highly polished all-metal faces, greatly reduce oxide buildup and the need for frequent head cleaning.
- Compatible mechanically and electrically with older model Nortronics heads.
- Superbly shielded against external magnetic fields.

### STANDARD

The STANDARD laminated versions are superior to conventional solid-core heads. They offer improved high frequency response, long life, hyperbolic all-metal faces and precision deposited quartz gaps. This standard line is recommended for non-critical applications where cost is of primary importance.

### CHOOSE FROM:

PREMIUM OR STANDARD VERSIONS

**Track Size:** 8-Track, 4-Track, 2-Track or Full Track

**Channels:** 4-Channel, 3-Channel, Stereo or Monophonic

**Face Contour:** Hyperbolic, Cylindrical or Relieved

**Case Size:** 9 different R/P—5 different Erase

**Impedances:** 8 standard R/P—3 standard Erase

**Gap Spacers:** 50 to 500 Micro-inch deposited quartz

**Mounting:** Base, Side, Rear or No Mount.

Plus ADJUSTABLE Mounting Assemblies

(For complete electrical and mechanical data, see the following 5 pages.)

# Nortronics®

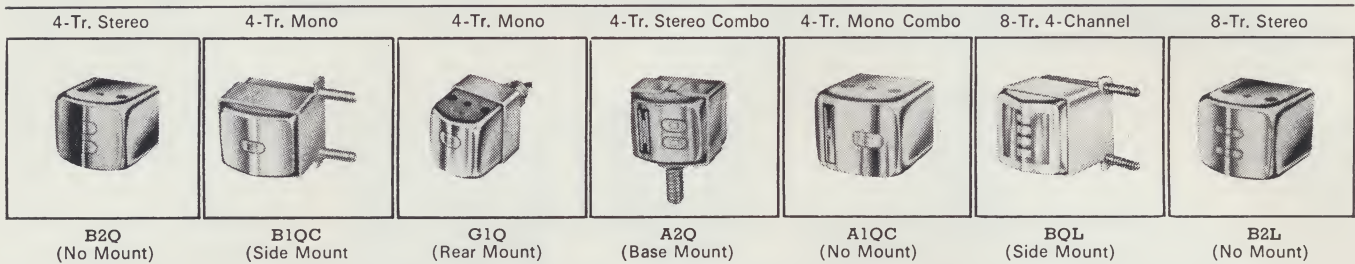


THE NORTRONICS COMPANY, INC.

8107 Tenth Avenue North, Minneapolis, Minnesota 55427

Phone: 612-545-0401





The heads are shown with various mounting hardware attached to indicate the variety of mountings available, but all are available in your choice of standard mounts: base, side, rear or no mount.

### TYPICAL SPECIFICATIONS FOR RECORD/PLAY AND RECORD HEADS

TRACK SYSTEM	4-TRACK (.043 IN. TRACK WIDTH)								8-TRACK (.020 IN. TRACK WIDTH)		
NORTONICS BASIC MODEL NO.	MONO-B1QC, G1Q, A1QC, E1QC (Hyperbolic of A1QC) STEREO-B2Q, G2Q, C2Q, A2Q, E2Q (Hyperbolic of A2Q)								STEREO B2L	4-CHANNEL BQL	
Electrical Code	8R	4R	8K	4K	6K	7K	7F2	2K	2K	4R	3K
Head Function	Record Only	Record Only	Record/Playback	Record/Playback	Record/Playback	Record/Playback	Record/Playback	Record/Playback	Record/Playback	Record/Playback	Record/Playback
Type of Circuit	Tubes/Transistors	Tubes/Transistors	Transistors	Transistors	Transistors	Transistors	Tubes/Transistors	Tubes/Transistors	Tubes/Transistors	Tubes/Transistors	Tubes/Transistors
Inductance, 1 KC	10 MHY	50 MHY	20 MHY	100 MHY	200 MHY	400 MHY	500 MHY	800 MHY	400 MHY	45MHY	240 MHY
Impedance, 1 KC	70 Ω	400 Ω	150 Ω	650 Ω	1.3 K	2.5 K	3.3 K	5 K	2.5 K	300 Ω	1.5 K
Maximum Bias Frequency	500 KC	250 KC	250 KC	140 KC	120 KC	100 KC	100 KC	80 KC	100 KC	300 KC	150 KC
*Resistance, D.C.	22 Ω	90 Ω	22 Ω	90 Ω	110 Ω	210 Ω	210 Ω	520 Ω	520 Ω	***	***
**Resistance, D.C.	32 Ω	90 Ω	32 Ω	90 Ω	200 Ω	390 Ω	390 Ω	700 Ω	700 Ω	220 Ω	765 Ω
Gap Spacer	0.5-MIL	0.5-MIL	0.1-MIL	0.1-MIL	0.1-MIL	0.1-MIL	0.05-MIL	0.1-MIL	0.1-MIL	0.5-MIL	0.1-MIL
**Track Spacing	.136-IN.	.136-IN.	.136-IN.	.136-IN.	.136-IN.	.136-IN.	.136-IN.	.136-IN.	.128-IN.	***	***
1 KC Crosstalk Rej.	55 DB	55 DB	55 DB	55 DB	55 DB	55 DB	55 DB	55 DB	55 DB	52 DB	52 DB

FOR PREMIUM HEADS—AVERAGE 7.5 IPS CONSTANT CURRENT RECORD/PLAYBACK CHARACTERISTICS USING 3M190 TAPE (3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED 12 DB BELOW TAPE SATURATION.											
Peak Bias Current, 60 KC	1.3 MA	0.65 MA	1.6 MA	0.70 MA	0.40 MA	0.25 MA	0.25 MA	0.16 MA	—	0.8 MA	0.3 MA
Bias Voltage RMS, 60 KC	3 V.	7.5 V.	6 V.	18 V.	25 V.	35 V.	50 V.	45 V.	—	10 V.	25 V.
Record Current	140 UA	60 UA	150 UA	70 UA	50 UA	35 UA	30 UA	25 UA	—	80 UA	35 UA
1 KC Output	—	—	0.5 MV	0.9 MV	1.3 MV	1.8 MV	1.8 MV	2.6 MV	—	—	1.2 MV
10 KC/1 KC Ratio	—	—	0 DB	0 DB	+1 DB	+1 DB	+2 DB	+1 DB	—	—	+1 DB

FOR PREMIUM HEADS—AVERAGE 3.75 IPS CONSTANT CURRENT RECORD/PLAYBACK CHARACTERISTICS USING 3M190 TAPE (3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED 12 DB BELOW TAPE SATURATION.											
Peak Bias Current, 60 KC	1.2 MA	0.50 MA	1.25 MA	0.50 MA	0.32 MA	0.20 MA	0.20 MA	0.12 MA	—	0.65 MA	0.24 MA
Bias Voltage RMS, 60 KC	2.5 V.	7.0 V.	5 V.	13 V.	20 V.	25 V.	35 V.	35 V.	—	9 V.	20 V.
Record Current	130 UA	50 UA	130 UA	50 UA	44 UA	30 UA	25 UA	22 UA	—	60 UA	30 UA
1 KC Output	—	—	0.4 MV	0.7 MV	1.0 MV	1.4 MV	1.4 MV	2.1 MV	—	—	0.8 MV
10 KC/1 KC Ratio	—	—	—10 DB	—10 DB	—9 DB	—9 DB	—7 DB	—9 DB	—	—	—12 DB

FOR STANDARD HEADS—AVERAGE 7.5 IPS CONSTANT CURRENT RECORD/PLAYBACK CHARACTERISTICS USING 3M190 TAPE (3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED 12 DB BELOW TAPE SATURATION.											
Peak Bias Current, 60 KC	—	—	—	1.1 MA	0.70 MA	0.42 MA	—	0.30 MA	.55 MA	NOT AVAILABLE IN STANDARD VERSION	
Bias Voltage RMS, 60 KC	—	—	—	20 V.	25 V.	35 V.	—	45 V.	32 V.		
Record Current	—	—	—	70 UA	50 UA	35 UA	—	25 UA	30 UA		
1 KC Output	—	—	—	0.8 MV	1.2 MV	1.6 MV	—	2.4 MV	0.9 MV		
10 KC/1 KC Ratio	—	—	—	—4 DB	—3 DB	—3 DB	—	—3 DB	—4 DB		

\*Mono \*\*Stereo \*\*\*\*4-Channel

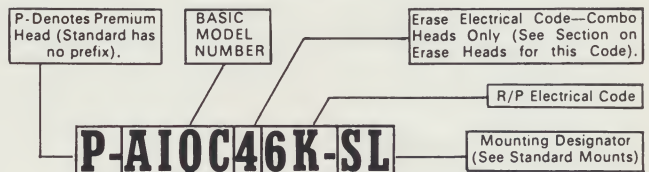
Specifications subject to change without notice

### HOW TO DETERMINE YOUR MODEL NUMBER

Because of the great variety of Nortronics heads and the large number of combinations of electrical and mechanical characteristics which are available, it is recommended that this Head Nomenclature Guide be used in selecting the proper model number for your Record/Play, Record, or Combo head.

As a typical example of utilization of this system, the model number to the right describes a "Premium, 4-track (quarter track) mono combination (combo) erase-R/P head with centered track. No. 4 erase electrical code (See erase electrical codes in the section of this publication describing erase heads), No. 6K R/P electrical code, 'A' style case, side mount with erase section to the left."

Another typical example would be a B2H4R-R-12S, "Standard, 2-track (half track) stereo record-only head, No. 4R record electrical code, 'B' style case, rear mount, 12 inch shielded leads."



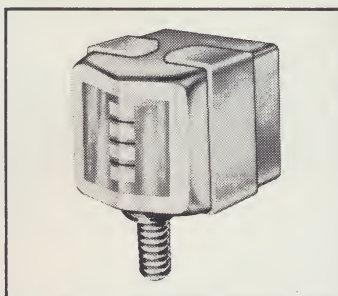
THE BASIC MODEL NUMBER describes the Mechanical Characteristics of the head as follows:

- A—Letter denotes case outline style (see Case Outline Styles)
- 1—Denotes number of channels
  - 1—Mono
  - 2—Stereo
  - 3—3-channel
  - Q—4-channel
- Q—Denotes track system
  - H—2-track (Half Track)
  - Q—4-track (Quarter Track)
  - L—8-track
- C—Track Location Designator (Mono Heads Only)
  - NONE—Standard Stereo Offset
  - C—Centered track
  - Y—.020 off center (G1HY)
  - .040 off center (B1HY)

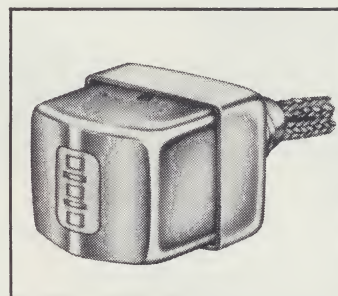




4 Channel  
**BQQ**  
(Base Mount)



3 Channel  
**B3Q**  
(Rear Mount)



The heads are shown with various mounting hardware attached to indicate the variety of mountings available, but all are available in your choice of standard mounts: base, side, rear or no mount.

## TYPICAL SPECIFICATIONS FOR RECORD/PLAY AND RECORD HEADS

TRACK SYSTEM	4-TRACK (.037 IN. WIDTH)				
NORTONICS BASIC MODEL NUMBER	BOQ 4-CHANNELS FOR 1/4" TAPE				
Electrical Code	23 R	4 R	4 K	3 K	3 F
Head Function	Duplicating Record	Record Only	Record/Playback	Record/Playback	Record/Playback
Type of Circuit	Tubes/Transistors	Tubes/Transistors	Transistors	Tubes/Transistors	Tubes/Transistors
Inductance, 1 KC	12 MHY	50 MHY	90 MHY	370 MHY	400 MHY
Impedance, 1 KC	75 Ω	320 Ω	600 Ω	2.2 K	2.5 K
Maximum Bias Frequency	500 KC	150 KC	100 KC	80 KC	80 KC
Resistance, D.C.	55 Ω	220 Ω	220 Ω	690 Ω	690 Ω
Gap Spacer	0.5-MIL	0.5-MIL	0.1-MIL	0.1-MIL	0.05-MIL
Track Spacing	.071-IN.	.071-IN.	.071-IN.	.071-IN.	.071-IN.
1 KC Crosstalk Rej.	50 DB	50 DB	50 DB	50 DB	50 DB

4-TRACK (.043 IN. WIDTH)			
P-B3Q 3-CHANNELS FOR 1/4" TAPE			
4 R	4 K	6 K	7 K
Record Only	Record/Playback	Record/Playback	Record/Playback
Tubes/Transistors	Transistors	Transistors	Tubes/Transistors
50 MHY	100 MHY	200 MHY	340 MHY
400 Ω	650 Ω	1.3 K	2.0 K
250 KC	140 KC	120 KC	100 KC
260 Ω	260 Ω	450 Ω	800 Ω
0.5-MIL	0.1-MIL	0.1-MIL	0.1-MIL
.136-IN.	.136-IN.	.136-IN.	.136-IN.
55 DB	55 DB	55 DB	55 DB

FOR PREMIUM HEADS—AVERAGE 7.5 IPS CONSTANT CURRENT RECORD/PLAYBACK CHARACTERISTICS USING 3M190 TAPE (3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED 12 DB BELOW TAPE SATURATION

Peak Bias Current, 60 KC	2.0 MA.	0.60 MA.	0.70 MA.	0.30 MA.	0.33 MA.
Bias Voltage RMS, 60 KC	4 V.	7 V.	15 V.	30 V.	50 V.
Record Current	110 UA.	60 UA.	60 UA.	34 UA.	32 UA.
1 KC Output	—	—	0.7 MV	1.4 MV	1.4 MV
10 KC/1 KC Ratio	—	—	0 DB	0 DB	+1 DB

0.65 MA.	0.70 MA.	0.40 MA.	0.25 MA.
7.5 V.	18 V.	20 V.	35 V.
60 UA.	60 UA.	50 UA.	35 UA.
—	0.9 MV	1.3 MV	1.8 MV
—	0 DB	+1 DB	+1 DB

FOR PREMIUM HEADS—AVERAGE 3.75 IPS CONSTANT CURRENT RECORD/PLAYBACK CHARACTERISTICS USING 3M190 TAPE (3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED 12 DB BELOW TAPE SATURATION

Peak Bias Current, 60 KC	1.6 MA.	0.50 MA.	0.50 MA.	0.22 MA.	0.20 MA.
Bias Voltage RMS, 60 KC	3 V.	6 V.	10 V.	25 V.	35 V.
Record Current	90 UA.	50 UA.	50 UA.	30 UA.	25 UA.
1 KC Output	—	—	0.5 MV	1.1 MV	1.0 MV
10 KC/1 KC Ratio	—	—	-10 DB	-9 DB	-7 DB

0.50 MA.	0.50 MA.	0.32 MA.	0.20 MA.
7.0 V.	13 V.	15 V.	25 V.
50 UA.	50 UA.	44 UA.	30 UA.
—	0.7 MV	1.0 MV	1.4 MV
—	-10 DB	-9 DB	-9 DB

NOT AVAILABLE IN STANDARD VERSION

Specifications subject to change without notice

## CASE OUTLINE STYLES

(Shown 1/2 Size)

**A** STYLE

**B** STYLE

**G** STYLE

**C** STYLE

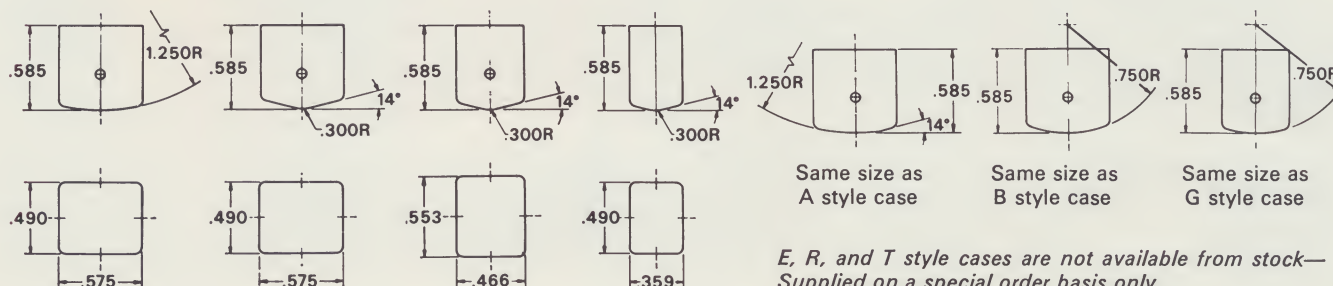
**E** STYLE

**R** STYLE

**T** STYLE

(Combo Heads Only)

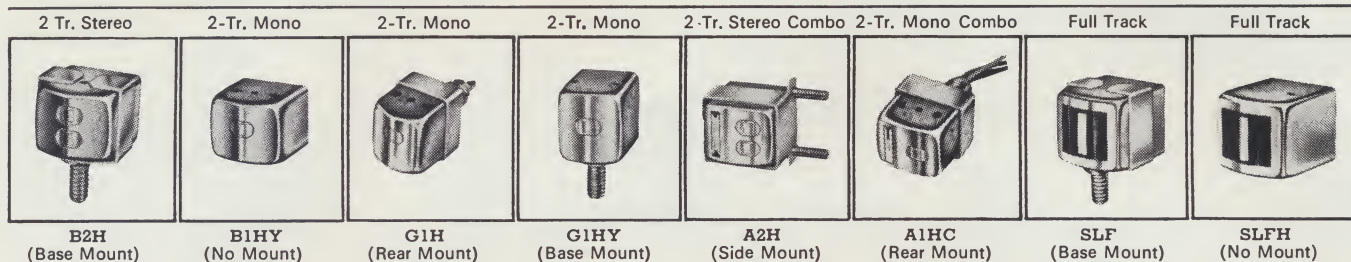
(Combo Heads Only)







# 2-TRACK AND FULL-TRACK HEADS



The heads are shown with various mounting hardware attached to indicate the variety of mountings available, but all are available in your choice of standard mounts: base, side, rear or no mount.

## TYPICAL SPECIFICATIONS FOR RECORD/PLAY AND RECORD HEADS

TRACK SYSTEM	2-TRACK (.080 IN. TRACK WIDTH)								FULL TRACK (.260 IN. TRACK WIDTH)		
NORTONICS BASIC MODEL NUMBER	MONO-B1HY, G1H, G1HY, A1HC, E1HC (Hyperbolic of A1HC) STEREO-B2H, A2H, E2H (Hyperbolic of A2H)								SLF (Cylindrical Face) SLFH (Hyperbolic Face)		
Electrical Code	8R	4R	8K	4K	6K	7K	7F2	2K	7R	4R	3L
Head Function	Record Only	Record Only	Record/Playback	Record/Playback	Record/Playback	Record/Playback	Record/Playback	Record/Playback	Duplicating Record	Record Only	Record/Playback
Type of Circuit	Tubes/Transistors	Tubes/Transistors	Transistors	Transistors	Transistors	Tubes/Transistors	Tubes/Transistors	Tubes	Tubes/Transistors	Tubes/Transistors	Tubes/Transistors
Inductance, 1 KC	10 MHY	50 MHY	20 MHY	100 MHY	200 MHY	400 MHY	450 MHY	800 MHY	10 MHY	55 MHY	250 MHY
Impedance, 1 KC	72 Ω	320 Ω	150 Ω	650 Ω	1.3 K	2.5 K	3.3 K	5 K	60 Ω	330 Ω	1.5 K
Maximum Bias Frequency	500 KC	200 KC	250 KC	150 KC	100 KC	100 KC	80 KC	60 KC	500 KC	250 KC	80 CK
*Resistance, D.C.	14 Ω	70 Ω	14 Ω	70 Ω	110 Ω	165 Ω	165 Ω	400 Ω	6 Ω	125 Ω	200 Ω
**Resistance, D.C.	27 Ω	130 Ω	27 Ω	130 Ω	245 Ω	410 Ω	410 Ω	720 Ω	—	—	—
Gap Spacer	0.5-MIL	0.5-MIL	0.1-MIL	0.1-MIL	0.1-MIL	0.1-MIL	0.05-MIL	0.1-MIL	0.5-MIL	0.5-MIL	0.16-MIL
**Track Spacing	.160-IN.	.160-IN.	.160-IN.	.160-IN.	.160-IN.	.160-IN.	.160-IN.	.160-IN.	—	—	—
1 KC Crosstalk Rej.	55 DB	55 DB	55 DB	55 DB	55 DB	55 DB	55 DB	55 DB	—	—	—
FOR PREMIUM HEADS—AVERAGE 7.5 IPS CONSTANT CURRENT RECORD/PLAYBACK CHARACTERISTICS USING 3M190 TAPE (3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED 12 DB BELOW TAPE SATURATION.											
Peak Bias Current, 60 KC	1.7 MA	0.70 MA	2.0 MA	0.80 MA	0.40 MA	0.33 MA	0.46 MA	0.25 MA	4.0 MA	0.8 MA	1.2 MA
Bias Voltage RMS, 60 KC	3.3 V.	9 V.	7.5 V.	20 V.	30 V.	40 V.	55 V.	55 V.	9 V.	24 V.	40 V.
Record Current	200 UA	75 UA	220 UA	80 UA	60 UA	40 UA	46 UA	30 UA	320 UA	100 UA	90 UA
1 KC Output	—	—	0.7 MV	1.2 MV	1.8 MV	2.4 MV	2.2 MV	3.6 MV	—	—	4.0 MV
10 KC/1 KC Ratio	—	—	0 DB	0 DB	+1 DB	+1 DB	+2 DB	+1 DB	—	—	0 DB
FOR PREMIUM HEADS—AVERAGE 3.75 IPS CONSTANT CURRENT RECORD/PLAYBACK CHARACTERISTICS USING 3M190 TAPE (3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED 12 DB BELOW TAPE SATURATION.											
Peak Bias Current, 60 KC	1.5 MA	0.60 MA	1.8 MA	0.70 MA	0.30 MA	0.22 MA	0.37 MA	0.20 MA	3.7 MA	0.7 MA	0.9 MA
Bias Voltage RMS, 60 KC	2.8 V.	8 V.	6.5 V.	15 V.	25 V.	30 V.	45 V.	40 V.	8.5 V.	20 V.	30 V.
Record Current	180 UA	65 UA	200 UA	66 UA	45 UA	30 UA	37 UA	22 UA	250 UA	90 UA	80 UA
1 KC Output	—	—	0.6 MV	0.9 MV	1.2 MV	1.8 MV	1.5 MV	2.4 MV	—	—	3.0 MV
10 KC/1 KC Ratio	—	—	—10 DB	—10 DB	—9 DB	—9 DB	—7 DB	—9 DB	—	—	—12 DB
FOR STANDARD HEADS—AVERAGE 7.5 IPS CONSTANT CURRENT RECORD/PLAYBACK CHARACTERISTICS USING 3M190 TAPE (3M111 WITHIN 5%) PEAK BIASED AT 1 KC AND RECORDED 12 DB BELOW TAPE SATURATION.											
Peak Bias Current, 60 KC	—	—	—	1.1 MA	0.80 MA	0.6 MA	—	0.4 MA	NOT AVAILABLE IN STANDARD VERSION		
Bias Voltage RMS, 60 KC	—	—	—	20 V.	30 V.	45 V.	—	65 V.			
Record Current	—	—	—	80 UA	60 UA	40 UA	—	30 UA			
1 KC Output	—	—	—	1.1 MV	1.7 MV	2.2 MV	—	3.4 MV			
10 KC/1 KC Ratio	—	—	—	—4 DB	—3 DB	—3 DB	—	—3 DB			

\*Mono

\*\*Stereo

Specifications subject to change without notice.

## STANDARD MOUNTS

R/P AND COMBO MOUNTING DESIGNATORS follow model number in this fashion: "G1HY-N", no mount,

"-B3", standard base mount—"G" or "T" style R/P heads only.

"-B", standard base mount—"B" or "R" style R/P heads.

"-BL", standard base mount—Combo heads ("A" and "E") with R/P section to the right.

"-BR", standard base mount—Combo heads ("A" and "E") with R/P section to the left.

"-S", standard side mount—All R/P heads.

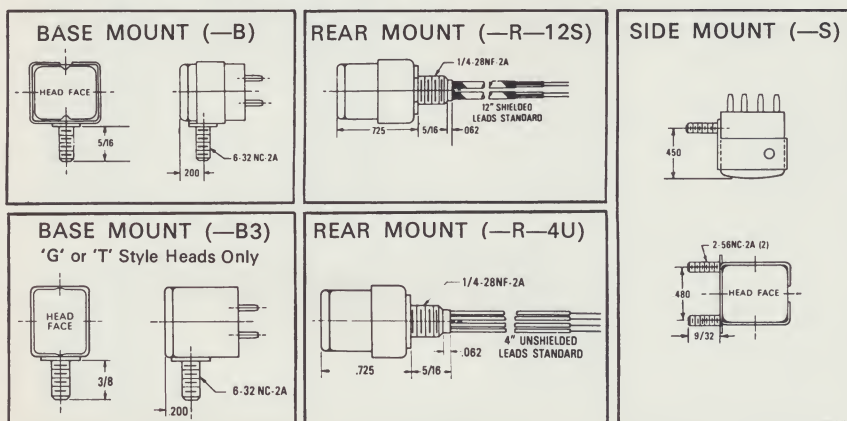
"-SL", standard side mount—Combo heads ("A" and "E") with R/P section to the right.

"-SR", standard side mount—Combo heads ("A" and "E") with R/P section to the left.

"-R-12S", standard rear mount with 12 inch shielded leads.

"-R-4U", standard rear mount with 4 inch unshielded leads.

Ask us if you have special mounting requirements.







## ERASE HEADS

Erase heads are shown with various mounts, but all are available in your choice of *base, side, rear or no mount*.

TO DETERMINE ERASE MODEL NUMBER, select a basic model number, add the erase electrical code, add a dash (-) and add mounting designator (below). Following are typical examples:

MEH1-S23U, 2-track (half track) mono erase head, No. 1 erase electrical code, "L" case, *side mount, track up* (studs are to left).

SEQ4-R-12S, 4-track (quarter track) stereo erase head, No. 4 erase electrical code, "S" case, rear mount, 12 inch shielded leads.

Erase Mounting Designator follows model number in this fashion:

"SEH2-N9", no mount (S Size)

"-N", no mount (L-Size)

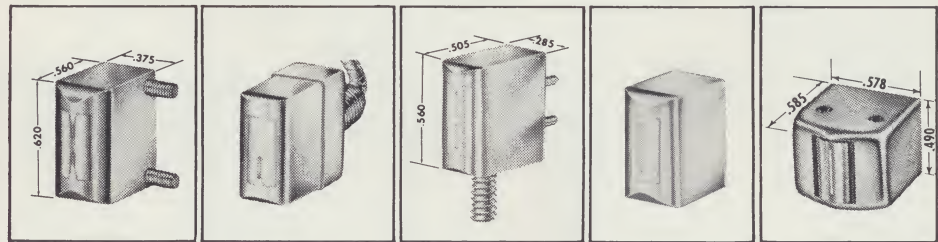
"-B3", standard base mount (Supplied S Size only). For mono heads, add a U for up or D for down after the B3 to denote track up or track down.

"-S23", standard side mount (Supplied L Size only). For mono heads, add a U for up or a D for down after S23 to denote track up or track down.

"-R-12S", standard rear mount and 12 inch shielded leads (Supplied S Size only)

"-R-4U", standard rear mount and 4 inch unshielded leads (Supplied S Size only)

For "B" style erase heads, mounts are the same as for R/P heads.



L Size  
SEQ  
(Side Mount—S23)

S Size  
MEH  
(Rear Mount—R-12S)

S Size  
SEH  
(Base Mount—B3)

S Size  
MEF  
(No Mount—N9)

B Style  
BIEF  
(No Mount—S)

### TYPICAL SPECIFICATIONS FOR ERASE HEADS

TRACK SYSTEM	4-TRACK			2-TRACK			FULL TRACK	
NORTRONICS BASIC MODEL NUMBER	MONO-MEQ STEREO-SEQ, B2EQ			MONO-MEH STEREO-SEH, B2EH			MEF B1EF	
Electrical Code	1	2	4	1	2	4	1	4
Inductance, 1 KC	80 MHY	0.13 MHY	10 MHY	50 MHY	0.20 MHY	8 MHY	40 MHY	3.6 MHY
Resistance, D.C.	240 Ω	1.8 Ω	38 Ω	160 Ω	1.8 Ω	30 Ω	88 Ω	25 Ω
†Erase Current Oper.	5 MA	120 MA	13 MA	6 MA	120 MA	20 MA	13 MA	40 MA
Impedance, 60 KC	30 K	40 Ω	3 K	20 K	50 Ω	2 K	12 K	1 K
Voltage, 60 KC RMS	120 V.	5 V.	40 V.	120 V.	6 V.	40 V.	120 V.	40 V.

†For 56 DB erasure of Saturated Tape

Specifications subject to change without notice.

## MINIATURE SERIES TAPE HEADS FOR MAGNETIC DRUMS, DISCS, FILM STRIPES AND MINIATURE RECORDERS

The Nortronics "L" and "M" series of magnetic heads are miniature in size but high in performance.

THE "L" HEADS, measuring only .312" x .312" x .375" deep, incorporate laminated cores plus all-metal face to reduce oxide loading problems. They are available in either a hyperbolic flush face contour for use with tape, or with relieved face giving a projecting track for drum, film or disc contact operation. Track widths can be supplied from .006" to .042" in .006" increments, and inductances to order. Mountings are base or rear #2-56 stud, or else the no-mount style.

THE "M" HEADS are even smaller; 1/4" cubed in dimensions. R/P track widths are .045" and .070", with plastic face either flush or relieved. Base, side, rear, or no-mount styles can be supplied. Various inductances are available.

### PARTIAL LISTING OF MINIATURE RECORD/PLAY HEADS

MODEL NUMBER	L42R8L	L24R2K	L24R8L	L12R8K	M70R4L
TYPE OF HEAD	Record/Playback	Record/Playback	Record/Playback	Record/Playback	Record/Playback
Inductance, 1 KC	80 MHY	200 MHY	40 MHY	30 MHY	20 MHY
Impedance, 1 KC	500 Ω	1.2 K	250 Ω	200 Ω	130 Ω
Resistance, D.C.	128 Ω	400 Ω	125 Ω	125 Ω	80 Ω
Gap Spacer	0.16-MIL	0.10-MIL	0.16-MIL	0.10-MIL	0.16-MIL
Track Width	0.42-INCH	.024-INCH	.024-INCH	.012-INCH	.070-INCH

Average 7.5 IPS constant current Record/Playback characteristics using 3M190 tape at 1 KC and recorded 12 DB below tape saturation at 1 KC.

Peak Bias, 60 KC	0.70 MA	0.33 MA	0.65 MA	0.75 MA	2.0 MA
Record Current	60 UA	30 UA	50 UA	60 UA	100 UA
1 KC Output	1.0 MV	1.0 MV	0.45 MV	0.25 MV	0.6 MV
10 KC/1 KC Ratio	0 DB	+2 DB	0 DB	0 DB	-8 DB

Specifications subject to change without notice.



### SIZES

"M" Series  
(1/4" W. x 1/4" H. x 1/4" D.)

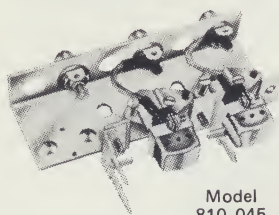
"L" Series  
(5/16" W. x 5/16" H. x 3/8" D.)

### PARTIAL LISTING OF MINIATURE ERASE HEADS

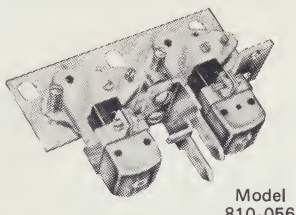
NORTRONICS MODEL NUMBER	L42E6U	M90E3U
Track Width	.042-INCH	.090-INCH
Inductance, 1 KC	5 MHY	16 MHY
Resistance, D. C.	38 Ω	315 Ω
†Erase Current Oper.	28-42 MA	12 MA
Impedance, 60 KC	1.2 K	4 K
Voltage, 60 KC RMS	32-48 V.	50 V.

†For 56 DB erasure of Saturated Tape





Model  
810-045



Model  
810-056

### CARTRIDGE MOUNTS

Revolutionary head mounting assembly for cartridge tape handlers which use the endless loop tape cartridges of the Fidelipac and Viking type. Eliminates the need for rear-mount style heads with their awkward mounting and adjustment problems. Offers "Micrometer" adjustments of head height, azimuth, and face perpendicularity. Lock screw on each head bracket "freezes" the adjustments.

Heads are fastened to bracket with a quick-release screw clamp. Replacement time is a matter of seconds when heads are connected with the plug and cable assemblies provided with the kits.

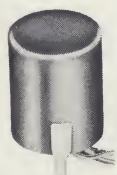
Two types of fork tape guides can be used to accurately control tape height with respect to tracks on head. The #173-16 standard guide (provided with the kit) can be used on either or both sides of the head which is located adjacent to the capstan. The #173-17 is a special brake-release type of guide-fork which is used to release the shroud brake of the larger Viking metal cartridges.

**#810-045 "B" Cartridge, Mount Kit.** Up to three heads may be mounted on this assembly, using two no-mount R/P heads of the "A", "B", "E", or "R" types. A small case erase head may be added in the third position on the channel base by means of a #810-044 head bracket. The kit is supplied unassembled and includes base channel, four jacks, two #810-042 brackets for the R/P or Combo heads, one #173-16 tape guide fork, and two plug and cable assemblies.

**#810-046 "G" Cartridge-Mount Kit.** As above, but with two #810-043 brackets for "G" or "T" size mono R/P heads.

**#810-055 "B" Two Head Cartridge-Mount Kit.** This smaller assembly can mount two no-mount R/P heads of the "A", "B", "E" or "R" types. The vertical back rail and the jacks have been eliminated. Connection to the heads may be made by use of the 18" shielded plug and cable assemblies provided with this kit.

**#810-056 "G" Two Head Cartridge-Mount Kit.** As above, but with #810-043 brackets for "G" or "T" size mono R/P heads.



T-60 SERIES

### BIAS OSCILLATOR TRANSFORMERS

... for transistor or vacuum tube circuits. Ferro-cube E-cores and special low resistance windings insure maximum efficiency. Other features: High "Q" stable voltage and frequency; pure waveform; aluminum can 1 1/8" diam. x 1 3/8" L. with spade lugs.

**T60T2**—For transistor circuits, push-pull or single-ended, supplies erase and bias power up to 100 kc. for medium and high impedance heads. Tapped secondary delivers 40 V., 80 V., and 120 V. rms to #4 and #1 erase heads.

**T60E**—For vacuum tube circuits, push-pull erase and bias power at operating frequencies from 40 kc. to 70 kc.; 120 V. rms to #1 erase heads and 7 V. rms to #2 erase heads.

**T60-F**—For vacuum tube circuits, push-pull erase and bias power at operating frequencies from 70 kc. to 100 kc.; output 150 V. rms tapped at 60 V. for high and medium impedance (#1 and #4) erase heads.

### UNIVERSAL MOUNTING BRACKETS

Designed for simplified mounting plus ease in adjustments.

These universal head mounting brackets provide for convenient adjustment of head azimuth height and tilt. Heads are easily snapped in and out of brackets, which are accurately positioned by means of "Micrometer" adjustment screws. Brackets are made of cadmium-plated steel and are supplied with mounting screws and spring—and can be combined with other Nortronics accessories to make various mounting assemblies.

**#810-027 Bracket.** For "A", "B", and "E" style no-mount heads.

**#810-028 Bracket.** For "G" size heads.

**#810-041 Bracket.** For small-case no-mount erase heads.



### SINGLE HEAD NEST

Unique design single-head assembly which includes adjustable brackets, tape guide posts and mounting plate. Ideal for use as a self-contained head mounting and tape guidance unit for Nortronics combo heads. Fits all "A", and "B" style heads.



MODEL 810-024

### PIN CLIPS

The **109-54** is a gold plated beryllium copper push-on clip formed to fit the terminal pins of all Nortronics heads. Lead wires may be soldered easily to the small end of the clip, leaving the larger end open to push on to the terminal pins. Pin clips permit ready attachment or removal of leads to terminals of heads, and also eliminate damage to head caused by soldering leads directly to pins.



MODEL 109-54

### PIN CLIP AND CABLE ASSEMBLIES

139 SERIES



Provided to make neat and simple electrical connections to the terminal pins of Nortronics heads. No. 26 insulated wire covered with shield braid, with **109-54** pin clips. Available in Red-Orange; Yellow-Blue; White-Black; Red-Black wire in 9" or 24" lengths.

### CONNECTOR PLUG

4-Pin Black Phenolic Plugs permit instant connection to all 4 pins of Stereo Heads and 2 pins of Mono Heads. **105-20** plug is for all Nortronics heads except SLF, SLFH, and older stereo and mono models. **105-18** plug is for SLF, SLFH, and older stereo and mono models.



MODEL 105-20

### PLUG AND CABLE ASSEMBLY

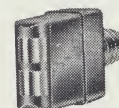
Assemblies ready to plug onto Head Terminal Pins. Consist of proper plug and two shielded cables (nominal length 18" each). **139-70** is used with all Nortronics stereo heads. **139-112** for all mono heads, except SLF, SLFH and mono-combo; **139-77** for mono-combo heads only; **139-69** for SLF, SLFH, and older stereo and mono models.



MODELS 139-70

### CONTACTOR HEAD

Use with metal-foil cueing to operate relay. Has two isolated contactor shoes. Model CH3-R-4U has rear mount and 4" leads. Model CH3-N9 is no-mount small-case size. CH3-B3 is base mount.



MODEL CH3

### TAPE GUIDE POST



MODEL  
173-13

A universal precision-made guide post for 1/4" tape—may readily be mounted to control the path of tape travel. Chrome plated brass insures long life and friction-free operation. Height is readily adjustable by loosening the locking set screw and rotating the threaded post.